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ABSTRACT

This paper constructs a taxonomy for non-oral reading based on Kenneth and Yetta Goodman's reading research. Cloze type deletions reveal how proficient readers and low ability readers from 6 to 14 years of age use graphophonic, syntactic, and semantic cues. It compares performance of Australian children on oral reading and outline strategies with performance on the non-oral reading tasks. Appendixes discussing the results from this pilot study are included. (CB)

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READING IN DIFFERENT KINDS OF AUSTRALIAN CHILDREN.

Paper presented at the Twenty-Second Annual Convention of the International Reading Association, Miami Beach, Florida, U.S.A., May 2 - 6, 1977.

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Reading in Different Kinds of Australian Children

The research referred to in this paper is being federally funded at Riverina College of Advanced Education's Reading/Language Centre by the Australian Government's Education Research and Development Committee. We have studied 150 children ranging in ages from 6 to 14 years, including a separate cohort of 20 diagnosed by psychological and medical testing as suffering from a Specific Learning Disability. The analysis of our data is not complete, but it is anticipated that the study will be finished by December. Observations made in this paper will not include the 20 S.L.D. subjects.

The subjects referred to have been required to read orally with a view to analysing their overt reading behavior according to psycholinguistic criteria established by Goodman (1973). In addition, we are trying to construct a taxonomy of non-oral reading miscues by carefully manipulating particular Cloze type deletions to reveal how readers use graphophonic, syntactic and semantic cues. The latter investigation extrapolates from work that I undertook in 1972 at Wayne State University.

In this paper I will assume that the Goodman research base is well known, and will therefore provide general findings on the oral reading of our subjects, after which I hope to be able to outline briefly some of our strategies with the non oral task.

According to the Goodman reading model the fluent reader has available to him three major cueing systems to use when

trying to reconstruct the meanings which an author originally encoded in print. These are:

(a) The graphophonic system - the shapes of print and the relationships between these shapes and various sounds.

(b) The syntactic system - a reader's feel for the way language flows.

(c) The semantic system - a reader's knowledge of the story line or topic being read about and the ability to cumulatively build up and monitor a meaningful and coherent representation of the story or topic as it unfolds.

The process of drawing upon the three systems in mutually complementary ways involves minimal visual sampling of certain "determining characteristics of the print" (Huey 1908). How then do Australian children handle this process? The children referred to have been categorized as proficient or of low ability according to predetermined attainment tests and teacher ratings.

Year 2 (Grade 2) 7.0 years:

At this level there is a marked contrast between the proficient and low ability subjects. The low second grade children tend to sample all the visual information available, reading word-by-word except when they cannot make an attempt at a word in which case they tend to omit altogether. This

trend towards omissions of unknown words contrasts with low ability older children who usually make an attempt at an unknown word and finish up substituting with a non-word. Omissions and substitutions of these children ignore the syntactic constraints of the language and, of course, the meaning.

The proficient second graders omit, insert and substitute words, and try to preserve syntax at least. They are capable of restructuring grammatical features while preserving syntax. Our preliminary data suggest that these children use less of the visual information than their low ability counterparts, but sample more than the proficient older readers. We have some evidence to suggest that the proficient second graders sample less text when the story line is more mature.

Year 4 (Grade 4) - 9.0 years

By this stage the low ability subjects have distinguished themselves by the preponderance of non-words that they use as substitutions for text words. It is also significant that they tend not to make corrections when the meaning does not tally. However, they are superior to the low ability second graders in their control over syntax, and it seems that these children try to preserve acceptable language patterns.

As hinted at previously, by this stage the proficient grade four subjects exhibit a strong tendency to use less visual information than they did when younger. They restructure through omissions and insertions as they read for meaning. We have also

noted a marked shift in accuracy by these children at around 8.0 years of age as if they are leaving behind them a reading model that reflects a view of reading more in keeping with a visual model as distinct from a meaning model. Accompanying this development is a strong trend towards regression and correction when meaning is not confirmed.

Year 6 (Grade 6) and above (11.0 years - 14.0 years)

From sixth grade onwards the subjects in both ability groups seem to have become confirmed in a reading model that has evolved over previous years. The low ability subjects try to preserve syntactic patterns, substitute significant numbers of non-words and generally use more visual information than proficient second-graders. Correction for this group is on the basis of preserving acceptable syntactic patterns rather than correcting to achieve meaning.

The proficient readers at grade 6 and above further exhibit the developing behavior of the proficient fourth graders. By this stage they have been confirmed in their view of the process as one which requires selection, prediction and confirmation. Correction strategies are brought into play at a significant level when syntax and/or meaning are not realized.

Summary

The oral reading behavior of the subjects suggests that there are three models of the reading process according to the age and proficienty of the reader. These are:

(a) For the proficient reader:

Print ——————→ Meaning

where the reader uses only as many visual clues as necessary in order to get meaning

(b) Print ——————→ Syntax

where the reader responds to what he knows about language but ignores meaning

(c) Print ——————→ Sound

where the reader is interested only in recoding from print to sound.

The Non Oral Task

With regard to the non oral taxonomy that we are trying to evolve I can, in this session, only sketch an outline of the underlying logistics and the data that have been extracted from a pilot study with 30 children.

Manipulating Cloze Procedure to Reveal a Reader's Use of the Grapho-Phonic System

If a reader is efficiently sampling the grapho-phonic cueing system, then, in theory, he responds to just a few of the determining features of print, and on the basis of these few features, "fills-in" the rest. Cloze procedure can be used to reveal this behaviour if careful control is maintained over which positions of the graphic array are deleted. For example imagine a chunk of print which reads

"Because Mary could drive proficiently I loaned her the car."

There are at least three possible types of Cloze deletions that could be made to the word "proficiently", e.g.

Type 1: Because Mary could drive _____
I loaned her the car.

Type 2: Because Mary could drive p_____tly
I loaned her the car.

Type 3: Because Mary could drive pr-f-c---tly,
I loaned her the car.

In type 1 there are any number of legitimate replacements that could be made ("well", "efficiently", "slowly", "carefully") that would not seriously affect the meaning. While such a replacement may reveal a reader's ability to use syntactic and semantic cues, it reveals little about the processes involved in sampling the grapho-phonic system.

Type 2 could admit either "perfectly" or "proficiently" as a replacement, and again either of them would reveal something about how the reader used both the syntactic and semantic systems. In Type 3, however, while efficient use of the syntactic and semantic cues available may suggest "perfectly" as a replacement and while "perfectly" may be supported by a cursory visual sampling of beginning and ending letter clues, a more efficient sampling will narrow down the possibilities to only one - "proficiently".

Of course, in the example cited the difference between "perfectly" and "proficiently" is trivial. The point is, however,

that if such carefully controlled Cloze deletions were scattered systematically throughout a story, an under-developed or inefficient ability to use the grapho-phonic cue system might begin to reveal itself.

Efficient use of the syntactic cueing system can be revealed by using Cloze procedure by evaluating the grammatical acceptability of the replacement of the deleted item. The most productive kinds of deletions for this task appear to be

(i) function words, especially if a pair occur consecutively, e.g.

"Most children's knowledge _____ _____ their language is complete by the time they enter school."

(ii) Words and inflections which show: tense, degree, number, possession, etc. e.g.

"The illness made John weaker and weak-- and we feared he would die".

(iii) Verb plus particle constructions

"John spilled the milk all over the floor so his mother made him _____ it _____".

Irrespective of what replacements are made in such instances, the ultimate test appears to be - "does a grammatically acceptable structure result?". An ability to replace the precise word(s) that was deleted suggests a firm grasp of the syntactic cueing system. Replacement of syntactically equivalent placeholders (whether synonymous or not) reveals an equally firm grasp of the

use of the syntactic system in making predictions, while replacement by a syntactically inappropriate place-holder, or the alteration of the intended syntactic structure, may reveal a less than efficient use of the syntactic cues available.

Manipulating Cloze Procedure to Reveal a Reader's Use of The Semantic Cueing System.

Efficient use of the semantic cueing system can be revealed by evaluating replacements in terms of their semantic acceptability in much the same way as substitutions are evaluated in the Reading Miscue Inventory (Burke & Y. Goodman).

Is it semantically acceptable?

- in terms of the total story?
- in terms of the T-unit in which it occurs?
- in terms of a "chunk" of language less than a complete T-unit?

Is there a change in intended meaning?

- that completely alters the intended story-line?
- slightly alters the intended story line, etc.

Deletion of the total word, especially if it is a contentive (noun, verb) seems to test the reader's use of story line very effectively. Deletion of pronouns, adjectives, adverbs, which relate anaphorically or cataphorically to some meaning cue earlier or later in the story are good tests of the reader's ability to

build up and hold in memory a meaningful representation of whatever the text is about, or to look ahead for cues - For example supposing the text read:

"Look what you did!" said Victor to Bill one day.

"You broke my plane!"

"I didn't mean to", Billy said.

Victor picked up his _____ plane.

The author's intended word is "broken".

An efficient reader can use the previously occurring verb "broke" to make the replacement. The reader who replaces it with a different yet appropriate word ("red", "toy", "big",) may be revealing an adequate yet less powerful ability to control and use his semantic knowledge.

As well as the cumulative build-up of the story line and the degree to which the reader is monitoring it, another aspect of the semantic system can be tapped using the procedure, viz, real-world-knowledge, or, as it's sometimes called "conceptual background". For example, supposing the text to be closed was

"This was my new plane", Victor said.

He took Billy by the arm.

"Say _____ sorry".

The intended replacement is "you're", as in "say you're sorry"; To make this replacement as the author intended the reader must have real background knowledge about arguments that brothers have

as well as knowledge of typical conversational strategies that such brothers would probably use, especially when one has just indicated anger and taken the other by the arm.

TESTING THE RATIONALE

The story "The Line Down the Middle of the Room" from the Reading Miscue Inventory collection of "Stories for Taping" was chosen to pilot the procedure. The story contains a total of approximately 520 running words. The ratio of deletion decided upon was 1 word in 5 which meant that approximately 100 words would be deleted from the story. In order to give the reader an opportunity to read himself into the story line it was decided to leave the first four sentences intact. This decision meant that a total of ninety four deletions were made from the story, approximately one-third of which were designed to reveal the reader's use of each of the three kinds of cues available. The degraded version of the text was typed using a large (primer) type face and administered to above average (proficient) and below average children. Children were given unlimited time to do the task and were allowed to ask for spellings if they did so quietly without giving clues to the rest of the class.

Where children's replacements were not the same as the deleted words these were analysed according to criteria indicated in Appendix A.

RESULTS: (See Appendix B)

The results from this pilot study reflect a superiority by the proficient readers in processing grammatical and semantic features of the text. Ability to retain meaning has been a characteristic of the proficient oral reader in the Goodman studies, and this is reflected in the non-oral task devised. There is no discernible difference, however, in the use by the different categories of reader in their use of peripheral graphic and phonemic cues, suggesting that the disposition to rely on peripheral information relevant to grapho-phonic elements is not an important variable in distinguishing between proficient and other readers.

The disposition for the below average readers to rely more strongly on prior as compared with subsequent text (anaphoric and cataphoric references) reflects a propensity for this group to operate similarly in the oral task. There would appear to a reliance by the low ability group on previous text information to fill gaps, whereas the proficient subjects appear inclined to ignore previously used words in their quest for meaning.

One of the more interesting trends is in the use of orthographic clusters by the two groups. The low ability subjects used 14% non-exact replacements where some graphic features were actually left as cues at the single word level compared with 8% for the proficient group.

We are currently looking at the relationship between this

variable and ability to process syntactic and semantic information.

APPENDIX A

NON-EXACT REPLACEMENTS

No.	Aspect of psycholinguistic concern	Question asked	Sub-categories of answers to questions
1.	Grammatical function	Does the reader's replacement serve the same grammatical function as the intended word(s)?	Yes (Y) No (N) Can't Tell (P)
2.	Syntactic Acceptability	Does the reader's replacement result in a syntactically acceptable construction?	Yes, the complete T-Unit is acceptable (Y) Yes, but at less than the T-Unit level (P) No, not syntactically acceptable at all (N)
3.	Semantic Acceptability	Does the reader's replacement result in a semantically acceptable construction?	(Y) Yes, at the whole story level. (T) Yes, but only at T-Unit level (P) Yes, but only at sub T-Unit level with prior portion of sentence. Yes, but at sub-T-Unit level with following portion of sentence. (N) Totally unacceptable.
4.	Loss of Meaning	Does the reader's replacement result in a loss of meaning?	(N) There is no loss in meaning at the total story level. (P) Change of unimportant detail. (M) Change in major character, incident or sequence. (Y) Yes, totally incongruous to story.

No.	Aspect of psycholinguistic concern	Question asked	Sub-categories of answers to questions
5.	Peripheral Graphemic Proximity	Is there a word in the periphery (two lines before/after) which has a degree of grapheme similarity to the replacement?	(Y) A high degree (identical) (P) A beginning or ending identical. (N) No similarities.
6.	Peripheral Phonemic Proximity	Is there a word in the periphery (two lines before/after) which has a degree of phonemic similarity to the replacement?	(Y) A high degree (identical) (P) A beginning or ending identical. (N) No similarities
7.	Anaphoric Reference	Was the intended word(s) available to the reader prior to the point of deletion.	(Y) In exactly the same form within two lines. (YG) Yes, but in a different grammatical form within two lines. (YP) Yes, but different word form - a paraphrase (N) Not available by any form of anaphoric reference.
8.	Cataphoric Reference	Would the intended word have been available to the reader if he'd continued to read on (two lines).	(Y) (YG) (YP) (N)
9.	Orthographic Clusters & Perception of these	Were any grapho-phonic clusters or cues left which may have assisted the reader	(Y) (N)

APPENDIX B

RESULTS EXPRESSED AS PERCENTAGES

			Above Average	Below Average
1.	Grammatical Function	Y	66	45
		N	4	7
		P	30	48
2.	Syntactic Acceptability	Y	70	48
		P	14	32
		N	16	20
3.	Semantic Acceptability	Y	66	30
		T	7	15
		P	11	20
		N	16	35
4.	Loss of Meaning	N	38	7
		P	36	32
		M	3	11
		Y	23	50
5.	Peripheral Graphemic Proximity	Y	25	25
		P	12	11
		N	63	64
6.	Peripheral Phonemic Proximity	Y	25	23
		P	12	11
		N	63	66
7.	Anaphoric Reference	Y	14	20
		YG	3	3
		YP	1	3
		N	82	74
8.	Cataphoric Reference	Y	14	11
		YG	0	1
		YP	2	1
		N	84	87
9.	Orthographic Clusters	Y	8	14
		N	92	86

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